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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/595,804	06/16/2000	Eric C. Hannah	INTL-0372-US (P8591)	3494
21906	7590	11/12/2003	EXAMINER	
TROP PRUNER & HU, PC 8554 KATY FREEWAY SUITE 100 HOUSTON, TX 77024			BOWES, SARA E	
			ART UNIT	PAPER NUMBER
			2171	2
DATE MAILED: 11/12/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/595,804

Applicant(s)

HANNAH ET AL.

Examiner

Sara Bowes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/16/00.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

On page 6, line 15, analog video signal 218. It is suggested that 218 be replaced with 18.

On page 6, line 23, incoming signal 216. It is suggested that 216 be replaced with 18.

On page 7, line 21, encrypted pattern identifier 24. It is suggested that 24 be replaced with 214.

On page 9, line 14, Figure 3. It is suggested that 3 be replaced with 5.

On page 12, line 8, transmitter 10. There is no component labeled "10" in Figure 5.

On page 12, line 15, frame buffer 312. It is suggested that 312 be replaced with 36.

On page 12, line 20, antenna or other video output device 14. There is no component labeled "14" in Figure 6.

On page 13, line 9, video signal 22 by an adder 22. There is no component labeled 22 in Figure 7.

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The drawings are further objected to as failing to remain consistent within the specification and drawings. For example, the Audio block of Figure 6 is discussed as an audio coder/decoder (CODEC) within the specification, the same component needs to be discussed and labeled in the same way. Other informalities exist and need to be corrected.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112, First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18 and 21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 18 and 21 are also rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably

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convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Referring to claim 18, the claim recites a television receiver comprising a digital-to-analog converter; however, the incoming signal is of an analog form and thus a analog-to-digital converter is needed.

Referring to claim 21, the claim recites the receiver of claim 18 including an analog-to-digital converter; however, the incoming signal is of a digital form and thus a digital-to-analog converter is needed.

Claim Rejections - 35 USC § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: a connection to/from the graphics pattern generator of claim 12, a connection from the video detector and a connection to/from the device to remove the graphics overlay of claim 18.

Claims 13-17, and 19-21 are also rejected because they are dependent on claim 2 and therefore inherit its deficiencies.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to provide sufficient antecedent basis.

Claim 1 recites the limitation "said digitally encrypted audio signal" in line 5.

Claim 12 recites the limitation "said converter" in line 6-7

Claim 12 recites the limitation "said stage" in line 8.

Claim 15 recites the limitation "said unit" in line 2.

Claim 18 recites the limitation "said converter" in line 8.

Claim 18 recites the limitation "said stage" in line 9.

Claim 21 recites the limitation "said unit" in line 2.

There is insufficient antecedent basis for the limitations in the above stated claims.

Claims 2-11, 13-14, 16-17, and 19-20 are also rejected because they are dependent on claim 2 and therefore inherit its deficiencies.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 9, 11-12, 18, and 21 is rejected under 35 U.S.C. 102(b) as being anticipated by over U.S. Patent 4,964,162 to McAdam et al.

Referring to claim 1, McAdam et al. teach a method of broadcasting television programming including:

- generating an analog video signal [column 7, lines 19-21];
- digitally encrypting an audio signal [figure 8, A/D CONVERTER 160, ENCRYPTOR 162];
- modulating a carrier with said digitally encrypted audio signal and said analog video signal [column 15, lines 51-54] ; and
- broadcasting said audio and video signals [column 15, lines 40-41].

Referring to claim 9, McAdam et al. teach the method of claim 1 wherein modulating a carrier includes using a conventional FM subcarrier and modulating said carrier with said audio signal [figure 11 and column 15, lines 32-36].

Referring to claim 11, McAdam et al. teach the method of claim 1 wherein generating an analog video signal includes generating an analog video signal with a graphical overlay pattern [figure 1, VIDEO ENCODER 22].

Referring to claim 12, McAdam et al teach a television transmitter comprising:

- a graphics pattern generator that provides a graphics pattern for an analog video signal;

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- an analog-to-digital converter coupled to receive an analog audio signal [figure 8, A/D CONVERTER 160];
- a digital encryption stage coupled to said converter [figure 8, ENCRYPTOR 162]; and
- a modulator coupled to said stage [figure 8, SQPR MODULATOR 170].

Referring to claim 18, McAdam et al. teach a television receiver comprising:

- a video detector to separate a received television signal into audio and video components [figure 12, AUDIO/VIDEO SEPARATOR];
- a device to remove the graphics overlay from an analog video signal [figure 12, VIDEO DECODER 222];
- a digital-to-analog converter coupled to said audio signal [digitizes(column 19, line 21)];
- a decryption stage coupled to said converter [figure 15, DECRYPTOR 310]; and
- a demodulator coupled to said stage [figure 15, SQPR DEMODULATOR 300].

Referring to claim 21, McAdam et al. teach the receiver of claim 18 including an analog-to-digital converter coupled to said unit [figure 15, D/A 314, 316].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2 - 8, 10, 13 -17, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,964,162 to McAdam et al. in view of U.S. Patent No. 5,416,801 to Chouly et al.

Referring to claims 2, 13, and 19, McAdam et al. teach all limitations of claims 2, 13, and 19 except for the method/apparatus of claim 1, 12, and 18 respectively, wherein modulating/demodulating a carrier with said digitally encrypted audio signal includes using orthogonal frequency division multiplexing to form symbols.

However, Chouly et al. do disclose the method/apparatus of claim 1 and 12 respectively, wherein modulating a carrier with said digitally encrypted audio signal

includes using orthogonal frequency division multiplexing to form symbols [column 3, lines 46-47].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouly et al.'s teaching of using orthogonal frequency division multiplexing to the system/method of McAdam et al., such that the multiplexer of McAdam et al. utilizes orthogonal frequency division multiplexing. One would have been motivated to modify McAdam et al.'s system/method as such in order to provide for a high level of protection because of the complexity of the orthogonal frequency division multiplex transmission technique.

Referring to claims 3, 14, and 20, McAdam et al. as modified teach all limitations of claims 3, 14, and 20 except for the method/apparatus of claim 2, 13, and 20 respectively, including using an inverse Fourier transform to convert a frequency domain signal back to the time domain and a Fourier transform unit coupled to said demodulator.

However, Chouly et al. do disclose the method/apparatus of claim 2 and 13 respectively, including using an inverse Fourier transform to convert a frequency domain signal back to the time domain and a Fourier transform unit coupled to said demodulator [column 4, lines 52 - 54].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouly et al.'s teaching of an inverse Fourier transform and a Fourier transform to the system/method of McAdam et al., such that McAdam et

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al.'s system would be include an inverse Fourier transformer, coupled to the modulator and the digital to analog converter on the transmitter side and a Fourier transform coupled to the demodulator on the receiver side. One would have been motivated to modify McAdam et al.'s system/method as such in order to generate the orthogonal frequency division-multiplexing signal of the frame.

Referring to claim 4, McAdam et al. as modified teach all limitations of claim 4 except for the method of claim 3 including providing a guard interval with an orthogonal frequency division multiplexing symbol.

However, Chouley et al. disclose the method of claim 3 including providing a guard interval with an orthogonal frequency division multiplexing symbol [column 9, line 61 and 65].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouly et al.'s teaching of using a guard interval with an orthogonal frequency division multiplexing symbol to the system/method of McAdam et al., such that the multiplexer of McAdam et al. utilizes orthogonal frequency division multiplexing with a guard interval. One would have been motivated to modify McAdam et al.'s system/method as such in order to absorb the echoes produced by multipath channels.

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Referring to claim 5, McAdam et al. as modified teach all limitations of claim 5 except for the method of claim 4 including providing said guard interval as a cyclic prefix.

However, Chouley et al. disclose the method of claim 4 including providing said guard interval as a cyclic prefix [column 11, lines 15-16].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouley et al.'s teaching of providing said guard interval as a cyclic prefix to the system/method of McAdam et al., such that the multiplexer of McAdam et al. utilizes a cyclic guard interval. One would have been motivated to modify McAdam et al.'s system/method as such in order to provide for absorption of echoes due to multipath channels.

Referring to claim 6, McAdam et al. as modified teach all limitations of claim 6 except for the method of claim 4 including setting the guard interval to a time equal to the worst-case multi-path delay.

However, Chouley et al. disclose the method of claim 4 including setting the guard interval to a time equal to the worst-case multi-path delay [column 10, lines 21 – 22].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouley et al.'s teaching to the system/method of McAdam et al., such that the system include an guard interval set to a time equal to the worst-

case multi-path delay. One would have been motivated to modify McAdam et al.'s system/method as such in order to calculate/allow for the worst case scenario.

Referring to claim 7, McAdam et al. as modified teach all limitations of claim 7 except the method of claim 6 including setting the multi-path delay time about 250 microseconds.

Chouly et al. disclose setting the multi-path delay time to 32 microseconds [column 10, line 19].

Chouly et al. disclose the claimed invention except for setting the multi-path time to about 250 microseconds. It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the multi-path delay time of Chouly et al. to 250 microseconds, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Allen, 105 USPQ 233.

Referring to claim 8, McAdam et al. as modified teach all limitations of claim 8 except the method of claim 7 including setting the guard interval to less than about one quarter of the symbol duration and setting the symbol time to about one millisecond.

Chouly et al. disclose setting the guard interval to less than about one quarter of the symbol duration [column 10, lines 23-24] and setting the symbol time to 128 microseconds [column 10, line 19]

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Chouly et al. disclose the claimed invention except for setting the symbol time to about one millisecond. It would have been obvious to one having ordinary skill in the art at the time the invention was made to set the symbol time of Chouly et al. to one millisecond, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Allen, 105 USPQ 233.

Referring to claim 10, McAdam et al. teach all limitations of claim 10 except the method of claim 7 including synthesizing a carrier to form a frequency modulated subcarrier.

However, Chouly et al. disclose the method of claim 7 including synthesizing a carrier to form a frequency modulated subcarrier [column 10, lines 9-12].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouly et al.'s teaching to the system/method of McAdam et al., such that the McAdam et al.'s system would include a modulator and a Fourier transformer. One would have been motivated to modify McAdam et al.'s system/method as such in order to provide a secure output for transmission.

Referring to claim 15, McAdam et al. as modified teach the transmitter of claim 14 including a digital-to-analog converter coupled to said unit [figure 9, D/A CONVERTER 212].

Referring to claim 16, McAdam et al. as modified teach the transmitter of claim 13 including a device that overlays said graphics pattern on an analog video signal [figure 1, VIDEO ENCODER 22].

Referring to claim 17, McAdam et al. as modified teach the transmitter of claim 13 including a modulator that modulates a carrier with said analog video signal with said overlaid graphics pattern [column 15, lines 51-54].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,598,471 to Rademeyer

U.S. Patent No. 5,790,784 to Beale et al.

Eureka-147 – Digital Audio Broadcasting to Titze et al.

U.S. Patent No. 5,953,311 to Davies et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Bowes whose telephone number is 703-305-0326. The examiner can normally be reached on 7:30-4:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

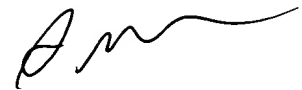
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

seb
11/4/03



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